WEST Search History

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DATE: Monday, January 14, 2008

Hide?	Set Name	Query	Hit Count
		DB=PGPB,USPT; PLUR=YES; OP=ADJ	
☐	L5	L4 and (gelatiniz$)	8
☐	L4	L3 and (starch.ab. or branched.ab. or branching.ab. or glucan.ab.)	56
☐	L3	(Roquette Freres).as.	189
☐	L2	L1 and (branched.ab. or branching.ab.)	9
☐	L1	536/123.12.icls. or 536/123.12.ccls. or 536/125.icls. or 536/125.ccls.	365

END OF SEARCH HISTORY

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     FILE 'HCAPLUS' ENTERED AT 09:15:28 ON 14 JAN 2008
L1       224710 S STARCH OR GLYCOGEN
L2       131029 S BRANCHED OR BRANCHING
L3      1194459 S ENZYM?
L4        64285 S CHLAMYDOMONAS OR ALGAE OR ALGAL
L5         2987 S L1 AND L2
L6         1621 S L1 AND L2 AND L3
L7           26 S L1 AND L2 AND L3 AND L4
L8         1806 S L5 AND (PY<2000 OR AY<2000 OR PRY<2000)
L9          892 S L6 AND (PY<2000 OR AY<2000 OR PRY<2000)
L10          17 S L7 AND (PY<2000 OR AY<2000 OR PRY<2000)

     FILE 'HCAPLUS' ENTERED AT 09:28:30 ON 14 JAN 2008
L11     2416109 S SYNTHESIS OR MANUFACTURE OR ISOLATION OR PURIFICATION
L12         278 S L9 AND L11

     FILE 'HCAPLUS' ENTERED AT 09:29:08 ON 14 JAN 2008
L13       16461 S RETROGRAD?
L14           2 S L12 AND L13

     FILE 'HCAPLUS' ENTERED AT 09:30:53 ON 14 JAN 2008
L15       11492 S GELATINIZ?
L16           3 S L15 AND L12
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=> file hcaplus
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         0.84       0.84

FILE 'HCAPLUS' ENTERED AT 09:15:28 ON 14 JAN 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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FILE COVERS 1907 - 14 Jan 2008  VOL 148 ISS 3
FILE LAST UPDATED: 13 Jan 2008  (20080113/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> s starch or glycogen

        172567 STARCH
         54438 GLYCOGEN
L1      224710 STARCH OR GLYCOGEN

=> s branched or branching

         80635 BRANCHED
         57013 BRANCHING
L2      131029 BRANCHED OR BRANCHING

=> s enzym?

L3     1194459 ENZYM?

=> s chlamydomonas or algae or algal

          7931 CHLAMYDOMONAS
         48611 ALGAE
         20958 ALGAL
L4       64285 CHLAMYDOMONAS OR ALGAE OR ALGAL

=> s l1 and l2

L5        2987 L1 AND L2

=> s l1 and l2 and l3

L6        1621 L1 AND L2 AND L3

=> s l1 and l2 and l3 and l4

L7          26 L1 AND L2 AND L3 AND L4
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=> s l5 and (PY<2000 or AY<2000 or PRY<2000)

      20069274 PY<2000
       3683713 AY<2000
       3153054 PRY<2000
L8        1806 L5 AND (PY<2000 OR AY<2000 OR PRY<2000)

=> s l6 and (PY<2000 or AY<2000 or PRY<2000)

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       3683713 AY<2000
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L9         892 L6 AND (PY<2000 OR AY<2000 OR PRY<2000)

=> s l7 and (PY<2000 or AY<2000 or PRY<2000)

      20069274 PY<2000
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       3153054 PRY<2000
L10          17 L7 AND (PY<2000 OR AY<2000 OR PRY<2000)

=> file stnguide

COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       2.69       3.53

FILE 'STNGUIDE' ENTERED AT 09:15:46 ON 14 JAN 2008
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
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FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Jan 11, 2008 (20080111/UP).

=> d l10 1-17 ti abs bib
YOU HAVE REQUESTED DATA FROM FILE 'HCAPLUS' - CONTINUE? (Y)/N:y



L10  ANSWER 1 OF 17  HCAPLUS  COPYRIGHT 2008 ACS on STN
TI   Fusion proteins with Chlamydomonas starch synthase and
     food and pharmaceuticals containing starch-fusion protein
     complexes
AB   The invention concerns starch granules containing a hybrid protein
     between a starch synthase and a protein of interest, the
     nucleotide sequences used for obtaining same, methods for preparing them and
     their uses, particularly in pharmaceutical compns.  Thus, the cDNA for the
     STA2 gene starch synthase of C. reinhardtii was cloned and
     sequenced.  A C-terminal-truncated starch synthase of 58
     kilodaltons (wild-type enzyme: 76 kilodaltons) encoded by the
     sta2-1 allele was found to have a six-fold increased Km for ADP-glucose
     and to bind to starch grains with unaltered affinity.
AN   2000:842295  HCAPLUS <<LOGINID::20080114>>
DN   134:14733
TI   Fusion proteins with Chlamydomonas starch synthase and
     food and pharmaceuticals containing starch-fusion protein
     complexes
IN   D'Hulst, Christophe; Ball, Steven
PA   Centre National de la Recherche Scientifique, Fr.
SO   PCT Int. Appl., 90 pp.
     CODEN: PIXXD2
DT   Patent
LA   French
```

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000071734	A1	20001130	WO 2000-FR1384	20000519 <--
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	FR 2793806	A1	20001124	FR 1999-6494	19990521 <--
	FR 2793806	B1	20030425		
	CA 2374416	A1	20001130	CA 2000-2374416	20000519 <--
	EP 1179078	A1	20020213	EP 2000-929649	20000519 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2003500060	T	20030107	JP 2000-620111	20000519 <--
	US 6982083	B1	20060103	US 2002-980771	20020110 <--
PRAI	FR 1999-6494	A	19990521 <--		
	WO 2000-FR1384	W	20000519		

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 2 OF 17 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Branched glucose soluble polymers and method for the production thereof
AB The invention relates to glucose soluble polymers which do not substantially contain any β-glucosidic bonds, characterized in that they comprise 2.5-10% α-1,6 glucosidic bonds, have a very low or zero tendency to retrograde in an aqueous solution determined according to a test A, possess an MP
which is determined according to a test C having a median value of the distribution profile of the mol. masses ranging from 104 and 105 Daltons and have a reducing sugar content that is at most 9%. The polymers could prepared from waxy maize starch by heating and degrading with enzyme.
AN 2000:790550 HCAPLUS <<LOGINID::20080114>>
DN 133:351718
TI Branched glucose soluble polymers and method for the production thereof
IN Caboche, Jean-jacques; Looten, Philippe; Petitjean, Carole; Fleche, Guy; Comini, Serge; Backer, Daniel
PA Roquette Freres, Fr.
SO PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DT Patent
LA French

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000066633	A1	20001109	WO 2000-FR1109	20000426 <--
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	FR 2792941	A1	20001103	FR 1999-5523	19990430 <--
	FR 2792941	B1	20010727		

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     CA 2371185           A1    20001109    CA 2000-2371185        20000426 <--
     EP 1177216           A1    20020206    EP 2000-922758         20000426 <--
     EP 1177216           B1    20040825
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO
     JP 2002543248        T     20021217    JP 2000-615661         20000426 <--
     AT 274525            T     20040915    AT 2000-922758         20000426 <--
     AU 777378            B2    20041014    AU 2000-43052          20000426 <--
     PT 1177216           T     20050131    PT 2000-922758         20000426 <--
     ES 2226821           T3    20050401    ES 2000-922758         20000426 <--
     NO 2001005224        A     20011025    NO 2001-5224           20011025 <--
     MX 2001PA11078       A     20020722    MX 2001-PA11078        20011030 <--
PRAI FR 1999-5523         A     19990430  <--
     WO 2000-FR1109       W     20000426
RE.CNT  3      THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
               ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10  ANSWER 3 OF 17  HCAPLUS  COPYRIGHT 2008 ACS on STN
TI   Modified starch metabolism enzymes and encoding genes
     for improvement and optimization of plant phenotypes
AB   The invention provides methods for generating, identifying, and selecting
     polynucleotides encoding novel starch metabolizing
     enzymes (NSME), NSME-encoding polynucleotides, compns. of
     recombinant shuffled NSME protein, plant cells and microbes containing a
     shuffled NSME polynucleotide in expressible form, plants containing a shuffled
     NSME polynucleotide in expressible form, novel starch compns.
     produced by said plants and cells, uses of such plants, cells, and
     starch compns.  Thus, to create an ADP-glucose pyrophosphorylase
     with altered properties, the genes from E. coli and other microorganisms
     which have at least 70% sequence identity are randomly fragmented with
     DNase I and fragments of 100-300 bp are selected.  These fragments are
     reassembled based on sequence similarity by primerless PCR.  Recombination
     as well as variable levels of mutations that are introduced by the PCR
     reaction to generate the diversity.  The assembled genes are cloned into a
     starch minus E. coli mutant that lacks the NSME.  Transformed
     colonies expressing a functional NSME are screened for production of
     glycogen by iodine staining.  Those colonies staining dark blue
     are presumed to contain deregulated NSME.  Colonies expressing shuffled
     NSME genes are selected and grown in larger amts. in liquid culture and
     assayed for specific properties.  Genes from those clones expressing one
     or more of the desired properties are iteratively shuffled in order to
     achieve optimization of one or more of the desired properties.  The
     optimized gene is used to transform the desired crop plant in order to
     deregulate and increase starch biosynthesis in various tissues
     including tubers and seeds.
AN   2000:742226  HCAPLUS <<LOGINID::20080114>>
DN   133:291931
TI   Modified starch metabolism enzymes and encoding genes
     for improvement and optimization of plant phenotypes
IN   Stemmer, Willem P. C.; Subramanian, Venkitswaran; Raillard, Sun Ai;
     Huisman, Gjalt
PA   Maxygen, Inc., USA
SO   PCT Int. Appl., 71 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.           KIND   DATE        APPLICATION NO.        DATE
     ---------------      ----   --------    --------------------   --------
PI   WO 2000061731        A2     20001019    WO 2000-US9840         20000412 <--
     WO 2000061731        A3     20010222
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR,
             CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU,
             ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU,
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LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE,
SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,
DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 6703240 B1 20040309 US 2000-547844 20000412 <--
PRAI US 1999-129009P P 19990413 <--

L10 ANSWER 4 OF 17 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Chimeric glycogen synthase gene-expressing transgenic plants with reduced starch loss at elevated growth temperature
AB Starch yield of wheat and maize plants grown under higher temps. than control plants is increased by the introduction of a chimeric gene comprising a glycogen synthase coding sequence under the control of a promoter directing expression and a terminator. A transit peptide for translocation of the glycogen synthase to the plant plastid may also be included in the chimeric gene. The starch may also have altered processing characteristics, in particular an increased chain length. Thus, transgenic wheat and maize expressing a chimeric Escherichia coli glgA gene were produced. The chimeric gene consisted of the endosperm-specific high-mol.-weight glutenin gene promoter of wheat fused to the pea Rubisco small subunit transit peptide sequence fused to the glgA gene. Starch produced by these transgenic plants had an increased chain length. Addnl., seeds from these plants loss 8-11% less seed weight at 27° than did control plants.
AN 2000:666884 HCAPLUS <<LOGINID::20080114>>
DN 133:249926
TI Chimeric glycogen synthase gene-expressing transgenic plants with reduced starch loss at elevated growth temperature
IN Burrell, Michael Meyrick; Hedley, Clare
PA Advanced Technologies (Cambridge) Limited, UK
SO PCT Int. Appl., 76 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000055331	A1	20000921	WO 2000-GB848	20000309 <--
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2365279	A1	20000921	CA 2000-2365279	20000309 <--
EP 1165802	A1	20020102	EP 2000-907849	20000309 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
PRAI GB 1999-5698	A	19990312 <--		
WO 2000-GB848	W	20000309		

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 5 OF 17 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Biosynthesis of altered starch in genetically modified plants with glycogen branching enzyme gene
AB A method and compns. for altering starch properties in wheat and maize plants, starch obtained by such method, and transgenic plants producing such starch, are disclosed. Starch with altered properties is produced by introducing a gene construct

comprising a glycogen branching enzyme coding sequence under the control of a promoter directing expression and a terminator. A transit peptide for translocation of the glycogen branching enzyme to the plant plastid may also be included in the chimeric gene construct. The starch has altered processing characteristics, in particular an decreased chain length. A chimeric gene containing the High Mol. Weight Glutenin (HMWG) promoter, nopaline synthase terminator, and the transit-peptide region of the small-subunit of the ribulose bisphosphate carboxylase (ssu of Rubisco) gene was utilized to direct expression of Escherichia coli glycogen branching enzyme (glgB) to wheat and maize. Expression of the glgB gene product in wheat and maize grain was detected by immunoblot anal. Anal. of the starch from these transgenic wheat and maize lines indicated an decrease in chain length, particularly an increase in chain length between 5 and 8 glucose units. The above parameters indicate a novel wheat and maize starch based on expression of the glgB E. coli gene product in transgenic plants.

AN 2000:368616 HCAPLUS <<LOGINID::20080114>>
DN 133:29689
TI Biosynthesis of altered starch in genetically modified plants with glycogen branching enzyme gene
IN Burrell, Michael Meyrick
PA Advanced Technologies (Cambridge) Limited, UK
SO PCT Int. Appl., 56 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000031282	A1	20000602	WO 1999-GB3762	19991108 <--

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI GB 1998-25262 A 19981119 <--
RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 6 OF 17 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Biosynthesis of altered starch in genetically modified plants with glycogen synthase gene
AB A method and compns. for altering starch properties in wheat and maize plants , starch obtained by such method, and transgenic plants producing such starch, are disclosed. Starch with altered properties is produced by introducing a gene construct comprising a glycogen synthase coding sequence under the control of a promoter directing expression and a terminator. A transit peptide for translocation of the glycogen synthase to the plant plastid may also be included in the chimeric gene construct. The starch has altered processing characteristics, in particular an increased chain length. A chimeric gene containing the High Mol. Weight Glutenin (HMWG) promoter, nopaline synthase terminator, and the transit-peptide region of the small-subunit of the ribulose bisphosphate carboxylase (ssu of Rubisco) gene was utilized to direct expression of Escherichia coli . glycogen synthase (glgA) to wheat and maize. Expression of the glgA gene product in wheat and maize grain was detected by immunoblot anal. Anal. of the starch from these transgenic wheat and maize

lines indicated an increase in chain length, particularly in chain length between 17 and 28 glucose units. Rapid viscometric anal. yielded lower peak and final viscosity values (about 30% of control values), whereas differential scanning calorimetry values indicated increased enthalpy values. The above parameters indicate a novel wheat and maize starch based on expression of the glgA E. coli gene product in transgenic plants.

AN 2000:368603 HCAPLUS <<LOGINID::20080114>>
DN 133:29688
TI Biosynthesis of altered starch in genetically modified plants with glycogen synthase gene
IN Burrell, Michael Meyrick
PA Advanced Technologies (Cambridge) Limited, UK
SO PCT Int. Appl., 66 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000031274	A1	20000602	WO 1999-GB3734	19991109 <--
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW				
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	CA 2349819	A1	20000602	CA 1999-2349819	19991109 <--
	EP 1131442	A1	20010912	EP 1999-954197	19991109 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	US 6468799	B1	20021022	US 1999-444728	19991118 <--
	AU 2000010616	A	20000807	AU 2000-10616	20000119 <--
	AU 2004202150	A1	20040617	AU 2004-202150	20040519
PRAI	GB 1998-25242	A	19981119 <--		
	WO 1999-GB3734	W	19991109 <--		
	AU 2000-10616	A3	20000119		

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 7 OF 17 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Method for the preparation of a mixture of starch branching enzymes using a mutant of the green algae Chlamydomonas reinhardtii
AB The invention concerns a method for obtaining a mixture of starch branching enzymes extracted from unicellular algae characterized in that it consists in modifying a unicellular algae such that it no longer expresses a starch debranching activity; in treating said modified unicellular algae so as to obtain a concentrated acellular extract; and in subjecting said concentrated acellular extract to mol. sieving so as to obtain a mixture of starch branching enzymes extracted from algae. Thus the wild type green algae Chlamydomonas reinhardtii was mutated on the sta7 locus by inserting the pARG7 plasmid carrying the argininosuccinate lyase coding sequence. The obtained phenotype was lacking starch debranching enzyme activity. The mutant was used for fermentation in 10 L scale to produce starch branching enzymes I and II. After cell disruption in a French press, the extract was purified in several steps and used for amylopectin modification.
AN 2000:227757 HCAPLUS <<LOGINID::20080114>>
DN 132:235980

TI Method for the preparation of a mixture of starch branching enzymes using a mutant of the green algae Chlamydomonas reinhardtii
IN Fleche, Guy; Looten, Philippe; Heysen, Arnaud; Ball, Steven
PA Roquette Freres, Fr.
SO PCT Int. Appl., 29 pp.
CODEN: PIXXD2
DT Patent
LA French
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000018893	A1	20000406	WO 1999-FR2261	19990923 <--
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
FR 2783838	A1	20000331	FR 1998-12051	19980925 <--
FR 2783838	B1	20001201		
CA 2345331	A1	20000406	CA 1999-2345331	19990923 <--
AU 9956320	A1	20000417	AU 1999-56320	19990923 <--
EP 1115843	A1	20010718	EP 1999-943032	19990923 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
PRAI FR 1998-12051	A	19980925 <--		
WO 1999-FR2261	W	19990923 <--		

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 8 OF 17 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Genetic and biochemical evidence for the involvement of α-1,4 glucanotransferases in amylopectin synthesis
AB A novel mutation in the Chlamydomonas reinhardtii STA11 gene, which results in significantly reduced granular starch deposition and major modifications in amylopectin structure and granule shape, is described. This defect simultaneously leads to the accumulation of linear malto-oligosaccharides. The sta11-1 mutation causes the absence of an α-1,4 glucanotransferase known as disproportionating enzyme (D-enzyme). D-enzyme activity was found to be correlated with the amount of wild-type allele doses in gene dosage expts. All other enzymes involved in starch biosynthesis, including ADP-glucose pyrophosphorylase, debranching enzymes, soluble and granule-bound starch synthases, branching enzymes, phosphorylases, α-glucosidases (maltases), and amylases, were unaffected by the mutation. These data indicate that the D-enzyme is required for normal starch granule biogenesis in the monocellular alga C. reinhardtii.
AN 1999:569820 HCAPLUS <<LOGINID::20080114>>
DN 131:283804
TI Genetic and biochemical evidence for the involvement of α-1,4 glucanotransferases in amylopectin synthesis
AU Colleoni, Christophe; Dauvillee, David; Mouille, Gregory; Buleon, Alain; Gallant, Daniel; Bouchet, Brigitte; Morell, Matthew; Samuel, Michael; Delrue, Brigitte; d'Hulst, Christophe; Bliard, Christophe; Nuzillard, Jean-Marc; Ball, Steven
CS Laboratoire de Chimie Biologique, Unite Mixte de Recherche du Centre National de la Recherche Scientifique no. 8576, Universite des Sciences et Technologies de Lille, Villeneuve D'Ascq, 59655, Fr.
SO Plant Physiology (1999), 120(4), 993-1003

CODEN: PLPHAY; ISSN: 0032-0889
PB American Society of Plant Physiologists
DT Journal
LA English
RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 9 OF 17 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Regulation of starch biosynthesis
AB A review with many refs. Transient or long-term storage of photosynthate in starch granules can be considered as the last step of eukaryotic photosynthesis. Storage of glucose into structures larger than the size of an individual bacterial cell is slowly uncovering as an exceedingly complex mechanism, which distinguishes the chloroplast from its ancestor prochloron or cyanobacterial-like cell. There is no question that starch biosynthesis has evolved from a pre-existing simpler bacterial glycogen synthesis pathway. However the number of enzymes involved in plant starch synthesis appears considerably higher. Chlamydomonas reinhardtii is now emerging as the most powerful model system to select for mutants defective in various aspects of granule biogenesis, degradation or overprodn. A full description of the eight loci reported to be involved is presented. A genetic demonstration is made of the involvement of the 3-PGA/Pi ratio in controlling the rates of polysaccharide synthesis in algae. The evidence for the resp. functions of the starch synthases in the building of specific sub-structures of the granule is detailed. The selection of starchless C. reinhardtii mutants, in which macrogranular starch is replaced with disorganized glycogen-like structures, has paved the way for a deeper understanding of plant amylopectin synthesis. A model is thus presented proposing the existence of pre-amylopectin, a branched precursor that is subsequently trimmed into an ordered structure. The trimming is proposed to relieve the phys. constraints on the upper size limit imposed on glycogen granule biogenesis. An account of the compartmentation of glycolysis and of both the pentose-phosphate and the starch biosynthesis pathways is given. The relevance of this compartmentation with respect to starch synthesis regulation is discussed.
AN 1998:806454 HCAPLUS <<LOGINID::20080114>>
DN 130:179657
TI Regulation of starch biosynthesis
AU Ball, Steven G.
CS Unite Mixte de Recherches du CNRS n°111, Laboratoire de Chimie Biologique, Villeneuve d'Ascq, 59655, Fr.
SO Advances in Photosynthesis (1998), 7(Molecular Biology of Chloroplasts and Mitochondria in Chlamydomonas), 549-567
CODEN: ADPHFM; ISSN: 1382-4252
PB Kluwer Academic Publishers
DT Journal; General Review
LA English
RE.CNT 68 THERE ARE 68 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 10 OF 17 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Cloning and characterization of a nuclear gene encoding a starch -branching enzyme from the marine red alga Gracilaria gracilis
AB The biosynthesis of starch in red algae occurs in the cytosol, in contrast to green plants where it takes place in the plastid. We have cloned a nuclear gene from the red alga Gracilaria gracilis that encodes a homolog of starch-branching enzymes (SBEs); this gene, which is apparently intron-free, was designated as GgSBE1. A potential TATA box, CAAT boxes, and other potential regulatory elements were observed in its 5' flanking region. The encoded 766-aa peptide shares significant sequence similarity with SBEs from green plants (at

least 40%), and with glycogen-branching enzymes (GBEs) from human (46%) and Saccharomyces cerevisiae (45%). Southern-hybridization anal. indicates that the gene is single-copy, although weaker signals suggest that related genes exist in the genome of G. gracilis. Phylogenetic analyses indicate that GgSBE1 groups within the eukaryote branching enzymes (BEs) and not with eubacterial GBEs, suggesting that its gene has not been derived directly from an endosymbiotic cyanobacterium, but instead is ancestrally eukaryotic.

AN 1998:549701 HCAPLUS <<LOGINID::20080114>>
DN 130:972
TI Cloning and characterization of a nuclear gene encoding a starch -branching enzyme from the marine red alga Gracilaria gracilis
AU Lluisma, A. O.; Ragan, M. A.
CS Institute for Marine Biosciences, National Research Council of Canada, Halifax, NS, B3H 3Z1, Can.
SO Current Genetics (1998), 34(2), 105-111
CODEN: CUGED5; ISSN: 0172-8083
PB Springer-Verlag
DT Journal
LA English
RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 11 OF 17 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Preamylopectin processing: a mandatory step for starch biosynthesis in plants
AB It has been generally assumed that the α-(1→4)-linked and α-(1→6)- branched glucans of starch are generated by the coordinated action of elongation (starch synthases) and branching enzyme. A novel Chlamydomonas locus (STA7) was identified that when defective leads to a wipeout of starch and its replacement by a small amount of glycogen-like material. Efforts to understand the enzymol. basis of this phenotype resulted in the determination of the selective disappearance of an 88-kD starch hydrolytic activity. It was further demonstrated that this enzyme is a debranching enzyme. Cleavage studies of the α-(1→6) linkage in a branched precursor of amylopectin (preamylopectin) provided the ground rules for understanding starch biosynthesis in plants. Therefore, it is proposed that amylopectin clusters are synthesized by a discontinuous mechanism involving a highly specific glucan trimming mechanism.
AN 1996:536048 HCAPLUS <<LOGINID::20080114>>
DN 125:190678
TI Preamylopectin processing: a mandatory step for starch biosynthesis in plants
AU Mouille, Gregory; Maddelein, Marie-Lise; Libessart, Nathalie; Talaga, Philippe; Decq, Andre; Delrue, Brigitte; Ball, Steven
CS Laboratoire Chimie Biologique, Universite Sciences Technologie Lille, Villeneuve, 59655, Fr.
SO Plant Cell (1996), 8(8), 1353-1366
CODEN: PLCEEW; ISSN: 1040-4651
PB American Society of Plant Physiologists
DT Journal
LA English

L10 ANSWER 12 OF 17 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Starch synthesis and its regulation. Can we assign specific functions for the starch biosynthetic enzymes?
AB Isolation of mutants of Chlamydomonas reinhardtii and maize endosperm having ADPGlc PPases with altered allosteric properties (activation by 3-P-Glycerate (3PGA) and inhibition by phosphate) and

altered in their starch levels compared to normal strains, strongly indicate that the observed in vitro regulatory effects are functional in vivo. The C. reinhardtii mutant is starch deficient and its ADPGlc PPase is minimally activated by 3PGA. The maize endosperm mutant has about 10-15% more starch than normal and its ADPGlc PPase is resistant to Pi inhibition. Thus, observed in vitro allosteric effects are functional in vivo. Transformation of certain plants with a bacterial allosteric mutant ADPGlc PPase increases starch levels 1.3- to 7-fold suggesting that ADPGlc synthesis is rate-limiting. The higher plant ADPGlc PPase is a tetramer of the $\alpha 2\beta 2$ type. Results indicate that the potato tuber ADPGlc PPase 50 kDa subunit is the catalytic subunit and the 51 kDa subunit is the regulatory subunit. The properties of the maize endosperm branching enzymes (BE) are different with respect to their preference in branching of amylose or amylopectin and in the size (DP) of oligosaccharide chain transferred and studies by others, suggest different properties and functions for the various starch synthases, in synthesis of amylopectin and amylose. A biosynthetic route is proposed involving the isoenzymes of branching enzymes, granule-bound starch synthase, the soluble starch synthases and debranching enzyme.

AN 1996:412196 HCAPLUS <<LOGINID::20080114>>

TI Starch synthesis and its regulation. Can we assign specific functions for the starch biosynthetic enzymes?

AU Preiss, Jack

CS Department Biochemistry, Michigan State University, East Lansing, MI, 48824, USA

SO Book of Abstracts, 212th ACS National Meeting, Orlando, FL, August 25-29 (1996), CARB-006 Publisher: American Chemical Society, Washington, D. C.
CODEN: 63BFAF

DT Conference; Meeting Abstract

LA English

L10 ANSWER 13 OF 17 HCAPLUS COPYRIGHT 2008 ACS on STN

TI Storage, photosynthesis, and growth: The conditional nature of mutations affecting starch synthesis and structure in Chlamydomonas

AB Growth-arrested Chlamydomonas cells accumulate a storage polysaccharide that bears strong structural and functional resemblance to higher plant storage starch. It is synthesized by similar enzymes and responds in an identical fashion to the presence of mutations affecting these activities. Log-phase photosynthetically active algae accumulate granular $\alpha(1\rightarrow4)$-linked, $\alpha(1\rightarrow6)$- branched glucans whose shape, cellular location, and structure differ markedly from those of storage starch. That synthesis of these two types of polysaccharides is controlled by both a common and a specific set of genes was evidenced by the identification of a new Chlamydomonas (STA4) locus specifically involved in the biosynthesis of storage starch. Mutants defective in STA4 accumulated a new type of high-amylose storage starch displaying an altered amylopectin chain size distribution. It is expected that the dual nature and functions of starch synthesis in unicellular green algae will yield new insights into the biol. reasons for the emergence of starch in the eukaryotic plant cell.

AN 1995:781476 HCAPLUS <<LOGINID::20080114>>

DN 123:165275

TI Storage, photosynthesis, and growth: The conditional nature of mutations affecting starch synthesis and structure in Chlamydomonas

AU Libessart, Nathalie; Maddelein, Marie-Lise; Van den Koornhuyse, Nathalie; Decq, Andre; Delrue, Brigitte; Mouille, Gregory; D'Hulst, Christophe; Ball, Steven

CS Roquette Freres, Lestrem, F62136, Fr.
SO Plant Cell (1995), 7(8), 1117-27
CODEN: PLCEEW; ISSN: 1040-4651
PB American Society of Plant Physiologists
DT Journal
LA English

L10 ANSWER 14 OF 17 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Toward an understanding of the biogenesis of the starch granule. Determination of granule-bound and soluble starch synthase functions in amylopectin synthesis
AB Plant starch synthesis can be distinguished from those of bacterial, fungal, and animal glycogen by the presence of multiple elongation (starch synthases) and branching enzymes. This complexity has precluded genetic assignment of functions to the various soluble starch synthases in the building of amylopectin. In Chlamydomonas, it was recently shown that defects in the major soluble starch synthase lead to a specific decrease in the amount of a subset of amylopectin chains whose length ranges between 8 and 40 glucose residues (Fontaine, T., D'Hulst, C., Maddelein, M.-L., Routier, F., Marianne-Pepin, T., Decq, A., Wieruszeski, J. M., Delrue, B., Van Den Koornhuyse, N., Bossu, J.-P., Fournet, B., and Ball, S. G. (1993) J. Biol. Chemical 268, 16223-16230). It is now demonstrated that granule-bound starch synthase, the enzyme that was thought to be solely responsible for amylose synthesis, is involved in amylopectin synthesis. Disruption of the Chlamydomonas granule-bound starch synthase structural gene establishes that synthesis of long chains by this enzyme can become an absolute requirement for amylopectin synthesis in particular mutant backgrounds. In the sole presence of soluble synthase I, Chlamydomonas directs the synthesis of a major water-soluble polysaccharide fraction and minute amts. of a new type of highly branched granular material, whose structure is intermediate between those of glycogen and amylopectin. These results indicate that the nature of the elongation enzyme conditions the synthesis of distinct size classes of glucans in all starch fractions.
AN 1994:575283 HCAPLUS <<LOGINID::20080114>>
DN 121:175283
TI Toward an understanding of the biogenesis of the starch granule. Determination of granule-bound and soluble starch synthase functions in amylopectin synthesis
AU Maddelein, Marie-Lise; Libessart, Nathalie; Bellanger, Fabienne; Delrue, Brigitte; D'Hulst, Christophe; Van den Koornhuyse, Nathalie; Fontaine, Thierry; Wieruszeski, Jean-Michel; Decq, Andre; Ball, Steven
CS Lab. Chimie Biologique, Univ. Sciences Technologies Lille, Villeneuve d'Ascq, 59655, Fr.
SO Journal of Biological Chemistry (1994), 269(40), 25150-7
CODEN: JBCHA3; ISSN: 0021-9258
DT Journal
LA English

L10 ANSWER 15 OF 17 HCAPLUS COPYRIGHT 2008 ACS on STN
TI A Chlamydomonas reinhardtii low-starch mutant is defective for 3-phosphoglycerate activation and orthophosphate inhibition of ADP-glucose pyrophosphorylase
AB A low-starch mutant accumulating less than 5% of wild-type amts. was isolated after x-ray mutagenesis of C. reinhardtii cells. The recessive st-1-1 defect segregated as a single Mendelian mutation through meiosis, and led to a severe decrease in starch accumulation under all culture conditions tested, whether in the light or in darkness. Adenosine 5'-diphosphoglucose pyrophosphorylase (in the absence of 3-phosphoglycerate), starch synthase, phosphoglucomutase, phosphorylase, and starch-branching enzyme were all characterized and shown to be unaffected by the mutation.

However, ADP-glucose pyrophosphorylase in the mutant had its sensitivity to activation by 3-phosphoglycerate lowered dramatically and became less responsive to orthophosphate. The results are consistent both with a mutation in a structural gene of a multisubunit enzyme or in a regulatory gene responsible for switching ADP-glucose pyrophosphorylase from a 3-phosphoglycerate-insensitive to a 3-phosphoglycerate-sensitive form. These results provide definite proof of the in vivo requirement for 3-phosphoglycerate activation to obtain substantial starch synthesis in plants. The conclusions hold both for synthesis from CO2 in the light or from exogenous organic C sources in darkness. A model is presented in which the existence of a 3-phosphoglycerate gradient explains localized starch synthesis around the pyrenoid of lower plants.

AN 1991:603057 HCAPLUS <<LOGINID::20080114>>
DN 115:203057
TI A Chlamydomonas reinhardtii low-starch mutant is defective for 3-phosphoglycerate activation and orthophosphate inhibition of ADP-glucose pyrophosphorylase
AU Ball, Steven; Marianne, Therese; Dirick, Leon; Fresnoy, Marc; Delrue, Brigitte; Decq, Andre
CS Lab. Chim. Biol., Univ. Sci. Tech. Lille Flandres-Artois, Villeneuve d'Ascq, F-59655, Fr.
SO Planta (1991), 185(1), 17-26
CODEN: PLANAB; ISSN: 0032-0935
DT Journal
LA English

L10 ANSWER 16 OF 17 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Floridean starch
AB cf. CA 48, 8568f. A survey was made of about 30 spp. of red algae from the Pacific Coast to find the best starting material for the isolation, in pure and native form, of the controversial substance, floridean starch (I). Constantinea subulifera proved to be the ideal alga for this purpose. The isolated starches were subjected to a number of phys., chemical, and enzymic tests in order to bring out possible differences from other starch-family substances, such as amylopectin and glycogen, isolated from higher plants. There is no real difference between the various compds., except that I gelatinizes only after prolonged boiling in H2O. End-group detns. by using IO4- show that the I mol. is a strongly branched structure somewhat comparable to glycogen.
AN 1961:138196 HCAPLUS <<LOGINID::20080114>>
DN 55:138196
OREF 55:26137g-i
TI Floridean starch
AU Meeuse, B. J. D.; Andries, M.; Wood, J. A.
CS Univ. of Washington, Seattle
SO Journal of Experimental Botany (1960), 11, 129-40
CODEN: JEBOA6; ISSN: 0022-0957
DT Journal
LA Unavailable

L10 ANSWER 17 OF 17 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Synthesis of polysaccharides in the algae. III. Induction of polysaccharide variants in Oscillatoria princeps by low temperatures
AB The usual polysaccharide synthesized by O. princeps is highly branched like glycogen, but the culture of single strands at 5-10° gives rise to variants which have a different cytological structure and synthesize only an unbranched polysaccharide. Enzyme prepns. from these variants convert hexose phosphate to a straight-chain polysaccharide similar to amylose. Upon returning to 25-32° the low-temperature variants revert to a normal pattern of polysaccharide formation, but this treatment is without effect on the low-temperature enzyme exts. It is suggested that a gene controlling the synthesis of a branching enzyme is altered at

5° and reverts to normal at 25°.
AN 1953:45044 HCAPLUS <<LOGINID::20080114>>
DN 47:45044
OREF 47:7608i,7609a-b
TI Synthesis of polysaccharides in the algae. III. Induction of polysaccharide variants in Oscillatoria princeps by low temperatures
AU Frederick, Jerome F.
CS New York Univ., New York, NY
SO Physiologia Plantarum (1953), 6, 96-9
CODEN: PHPLAI; ISSN: 0031-9317
DT Journal
LA Unavailable

=> d his

(FILE 'HOME' ENTERED AT 09:13:12 ON 14 JAN 2008)

FILE 'HCAPLUS' ENTERED AT 09:15:28 ON 14 JAN 2008
L1 224710 S STARCH OR GLYCOGEN
L2 131029 S BRANCHED OR BRANCHING
L3 1194459 S ENZYM?
L4 64285 S CHLAMYDOMONAS OR ALGAE OR ALGAL
L5 2987 S L1 AND L2
L6 1621 S L1 AND L2 AND L3
L7 26 S L1 AND L2 AND L3 AND L4
L8 1806 S L5 AND (PY<2000 OR AY<2000 OR PRY<2000)
L9 892 S L6 AND (PY<2000 OR AY<2000 OR PRY<2000)
L10 17 S L7 AND (PY<2000 OR AY<2000 OR PRY<2000)

FILE 'STNGUIDE' ENTERED AT 09:15:46 ON 14 JAN 2008

FILE 'HCAPLUS' ENTERED AT 09:16:00 ON 14 JAN 2008

FILE 'STNGUIDE' ENTERED AT 09:16:01 ON 14 JAN 2008

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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
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DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-13.60

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FILE 'STNGUIDE' ENTERED AT 09:27:54 ON 14 JAN 2008

COST IN U.S. DOLLARS	SINCE FILE	TOTAL

	ENTRY	SESSION
FULL ESTIMATED COST	0.06	55.81

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-13.60

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=> file hcaplus
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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.12	55.87

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
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=> s synthesis or manufacture or isolation or purification

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        489111 MANUFACTURE
        270239 ISOLATION
        348252 PURIFICATION
L11    2416109 SYNTHESIS OR MANUFACTURE OR ISOLATION OR PURIFICATION

=> s l9 and l11

L12         278 L9 AND L11

=> file stnguide
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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	2.69	58.56

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-13.60

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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.06	58.62

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-13.60

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=> s retrograd?

L13 16461 RETROGRAD?

=> s l12 and l13

L14 2 L12 AND L13

=> file stnguide

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	2.69	61.31

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-13.60

FILE 'STNGUIDE' ENTERED AT 09:29:11 ON 14 JAN 2008
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LAST RELOADED: Jan 11, 2008 (20080111/UP).

=> d l14 1-2 ti

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L14 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Enzyme treatment of carbohydrates for the manufacture of glucans having cyclic structure

L14 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Studies on enzymically modified branched polysaccharides. II. Star-shaped polymers with glycogen and amylopectin as structure models for starch

=> d l14 1-2 ti ans bib
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=> d l14 1-2 ti abs bib
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L14 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Enzyme treatment of carbohydrates for the manufacture of glucans having cyclic structure
AB Glucan having a degree of polymerization of ≥50 and including an inner branched cyclic structure portion and an outer branched structure portion, and its mixture with a glucan having a cyclic structure consisting of only α-1,4-glucoside bonds are claimed. The glucan, useful as starch substitute in food, beverages, infusion compns., and adhesives and as an anti-retrogradation agent, is produced by allowing a carbohydrate containing α-1,4-bonds and ≥1 α-1,6-glucoside bond, specifically starch or amylopectin, to react with an enzyme capable of acting on the carbohydrate to form a cyclic structure, e.g., branching enzyme, 4-α-glucosyltransferase, or cyclodextrin glucosyltransferase.
AN 1996:422367 HCAPLUS <<LOGINID::20080114>>
DN 125:61397
TI Enzyme treatment of carbohydrates for the manufacture of glucans having cyclic structure
IN Imanaka, Tadayuki; Terada, Yoshinobu; Takaha, Takeshi; Yanase, Michiyo; Okada, Shigetaka; Takata, Hiroki; Nakamura, Hiroyasu; Fujii, Kazutoshi
PA Ezaki Glico Co., Ltd., Japan
SO Eur. Pat. Appl., 50 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 710674	A2	19960508	EP 1995-250222	19950913 <--
	EP 710674	A3	19960605		
	EP 710674	B1	20020213		
	R: CH, DE, DK, FR, GB, LI, NL				
	JP 08134104	A	19960528	JP 1995-195647	19950731 <--
	JP 3107358	B2	20001106		
PRAI	JP 1994-218554	A	19940913 <--		
	JP 1995-195647	A	19950731 <--		

L14 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Studies on enzymically modified branched

polysaccharides. II. Star-shaped polymers with glycogen and amylopectin as structure models for starch

AB The number and lengths of outer chains of amylopectin and glycogen were varied by: (1) partial debranching of amylopectin with pullulanase followed by addnl. synthesis with potato phosphorylase, or (2) use of muscle phosphorylase with either amylopectin or glycogen without prior debranching. The resulting star-shaped mols., consisting of amylose chains grafted to amylopectin or glycogen, may be regarded as models for starch and possibly intermediate products of starch components. The dependence of intrinsic viscosity and radius of gyration on mol. weight of the polymers was obtained by viscosity and light scattering measurements on unsubstituted as well as tricarbanilated products. The proportion, length, and distribution of lengths of amylose branches of the polymers influenced their hydrodynamic behavior as shown by different curves of the above phys. measurements. Mols. with nonuniform length of branches had a relatively higher viscosity than those with uniform branch length. Also, the types of curves of sp. viscosity vs. polymerization were very similar for all polymers in which muscle phosphorylase was used for addnl. synthesis, in contrast to the results with the debranched polymers which were treated with potato phosphorylase. The retrogradation rate (the time at which turbidity 1st appears) of the glycogen and amylopectin star-shaped polymers increased toward shorter branch lengths (maximum at d.p. 80), as in the case of amylose. Pullulanase debranched the long-chain derivs. of amylopectin, but not the corresponding glycogen star-shaped polymers. The typical reaction of concanavalin A to form insol. complexes with glycogen did not occur if longer branches were present.

AN 1977:417655 HCAPLUS <<LOGINID::20080114>>

DN 87:17655

OREF 87:2769a,2772a

TI Studies on enzymically modified branched polysaccharides. II. Star-shaped polymers with glycogen and amylopectin as structure models for starch

AU Pfannemueller, B.; Potratz, C.

CS Inst. Makromol. Chem., Albert-Ludwig-Univ., Freiburg/Br., Fed. Rep. Ger.

SO Staerke (1977), 29(3), 73-80
CODEN: STRKA6; ISSN: 0038-9056

DT Journal

LA German

=> file hcaplus

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.12	73.47

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-15.20

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=> s gelatiniz?

L15 11492 GELATINIZ?

=> s l15 and l12

L16 3 L15 AND L12

=> file stnguide

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	2.69	76.16
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-15.20

FILE 'STNGUIDE' ENTERED AT 09:30:55 ON 14 JAN 2008
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FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Jan 11, 2008 (20080111/UP).

=> d l16 -13 ti abs bib
YOU HAVE REQUESTED DATA FROM FILE 'HCAPLUS' - CONTINUE? (Y)/N:y

L16 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Manufacture of gelatinized starch liquid
with high transparency
AB The title liquid, when incorporated into food-based oils or higher fatty acid alkali salts causing no discoloration and odor due to oxidative deterioration, is obtained from starch degradation products having >50% fraction with mol. weight range of 20,000-2,500,000, starch degradation products having DE (dextrin equiv) of 1-20, or starch degradation products having cyclic structure and mol. weight of 8000-800,000. Starch degradation products with cyclic structure can be formed by treating a starch compound or mixture with branching enzymes.
AN 1998:42073 HCAPLUS <<LOGINID::20080114>>
DN 128:129399
TI Manufacture of gelatinized starch liquid
with high transparency
IN Nakamura, Hiroyasu; Hama, Yoshiaki; Okamoto, Harumi; Miyaki, Yasutomo
PA Ezaki Glico Co., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10008026	A	19980113	JP 1996-180061	19960619 <--
	JP 3025869	B2	20000327		
PRAI	JP 1996-180061		19960619 <--		

L16 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Starch biosynthesis and modification of starch structure in transgenic plants
AB Starch is synthesized through the ADP-glucose pathway, involving the 3 enzymes ADP-glucose pyrophosphorylase, starch synthase, and starch-branching enzyme. ADP-glucose pyrophosphorylase is the key enzyme of the pathway, determining the flux of C into starch. It generates ADP-glucose, which is the substrate for the starch synthases, from glucose-1-phosphate and ATP releasing pyrophosphate. The enzyme is stimulated by 3-phosphoglycerate and inhibited through inorg. phosphate. The starch synthases, which catalyze the transfer of glucose from ADP-glucose to the nonreducing end of a growing α-1,4-glucan, are divided into 2 classes, the granule-bound starch synthases (GBSS) and the soluble starch synthases (SS). In both classes several isoforms were described from many different plant species. The branching enzyme, which introduces branch points into the amylopectin, can also occur in different isoforms. Other enzymes present in plants, which also act on α-1,4-glucans, such as the starch phosphorylases, disproportionating enzyme and different starch hydrolases, might also be important for determining the starch structure and, therefore, its processibility. Many aspects of starch synthesis are not fully understood to date. Starch metabolism can be manipulated through genetic engineering, either by the ectopic expression of different heterologous genes, or through the repression of the expression of endogenous genes using antisense RNA technol. This not only allows the functional anal. of starch biosynthetic proteins, but also the manipulation of starch structure in order to widen its industrial applications. In this way many different potato lines were generated, containing either different amts. of starch, or which synthesize a structurally modified starch. These structural changes relate to the amylose content, the phosphate content, or the gelatinization and gelation characteristics of the starch.
AN 1997:568887 HCAPLUS <<LOGINID::20080114>>
DN 127:261734
TI Starch biosynthesis and modification of starch structure in transgenic plants
AU Kossmann, J.; Buttcher, V.; Abel, G. J. W.; Duwenig, E.; Emmermann, M.; Frohberg, C.; Lloyd, J. R.; Lorberth, R.; Springer, F.; Welsh, T.; Willmitzer, L.
CS Max-Planck-Institut Molekulare Pflanzenphysiologie, Golm, D-14476, Germany
SO Macromolecular Symposia (1997), 120(Functional Polysaccharides II), 29-38
CODEN: MSYMEC; ISSN: 1022-1360
PB Huethig & Wepf
DT Journal
LA English

L16 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Floridean starch
AB cf. CA 48, 8568f. A survey was made of about 30 spp. of red algae from the Pacific Coast to find the best starting material for the isolation, in pure and native form, of the controversial substance, floridean starch (I). Constantinea subulifera proved to be the ideal alga for this purpose. The isolated starches were

subjected to a number of phys., chemical, and enzymic tests in order to bring out possible differences from other starch-family substances, such as amylopectin and glycogen, isolated from higher plants. There is no real difference between the various compds., except that I gelatinizes only after prolonged boiling in H2O. End-group detns. by using IO4- show that the I mol. is a strongly branched structure somewhat comparable to glycogen.

AN 1961:138196 HCAPLUS <<LOGINID::20080114>>
DN 55:138196
OREF 55:26137g-i
TI Floridean starch
AU Meeuse, B. J. D.; Andries, M.; Wood, J. A.
CS Univ. of Washington, Seattle
SO Journal of Experimental Botany (1960), 11, 129-40
CODEN: JEBOA6; ISSN: 0022-0957
DT Journal
LA Unavailable